

Amendments to the Drawings

The attached sheets of drawings include changes to FIGs. 1, 2, and 4A-4C. These sheets replace the original sheets including FIGs. 1, 2, and 4A-4C. In FIGs. 1, 2, and 4A-4C, undefined acronyms have been removed in response to the Examiner's objections. FIG. 4C has also been amended to correct a clerical error.

Attachment: Five (5) Replacement Sheets

Five (5) Annotated Sheets Showing Changes

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-70 are pending in the application, with claims 1, 7, 8, 10, 16, 22, 23, 26, 39 and 55 being the independent claims. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Applicants submit that the aforementioned amendments to claims 16-23, 37-45, and 47-50, and FIGs. 1, 2, and 4A-4C should be properly entered after the instant Final Office Action as they raise no new issues requiring further search and consideration by the Examiner. Additionally, Applicants submit the aforementioned amendments to the claims and drawings advances prosecution of the instant application, and thereby places the application in better form for allowance and/or appeal.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Allowable Subject Matter

Applicants note with appreciation the Examiner's allowance of claims 7, 8, 22, and 23. Applicants note with appreciation the Examiner's indication on page 13 of allowability of claims 51, 52, 60, and 61 if put into independent form.

Objection to the Claims

On page 4, the Examiner objected to claim 40 because it depended from succeeding claim 42 as written. Claim 40 has been amended to correct the typographical error. Claim 40 now properly depends from claim 39. Applicants respectfully request the Examiner withdraw the objection to this claim.

On page 3-4, the Examiner objected to claims 16-23, 37-39, 41-45, and 47-50 for reciting the phrase “adapted to.” Applicants renew their assertion that claims 16-23, 37-39, 41-45, and 47-50 with the phrase “adapted to” defined the invention as required by 35 U.S.C. § 112. However, in the interest of expediting prosecution, Applicants have amended claims 16-23, 37-39, 41-45, and 47-50 without conceding the propriety of the objection. Applicants respectfully request the Examiner withdraw the objections to the claims.

Objections to the Drawings

On page 2, the Examiner objected to the drawings because FIGs. 1, 2, 4A and 4C do not have a descriptive legend of the acronyms CMTS, HFC, CM, SDRAM, and NCO. Although suitable legends “may be required by the Examiner where necessary for understanding of the drawing” (37 C.F.R. § 1.84), Applicants respectfully disagree with the Examiner’s position with regard to the particular legends referred to in the action.

The acronyms are shown as labels for various blocks and these labels are described in the specification as amended. The specification description aids the reader in identifying the functions of all blocks labeled with the acronyms. All blocks of the

drawings have reference numerals and the reader can easily correlate all blocks with text description in the specification as follows:

CMTS (104): “The cable headend 102 includes at least one cable modem termination system (CMTS) 104.” (paragraph [0027]).

HFC Network (106): “. . . via a communications network 106, which, by way of example, may comprise a hybrid fiber coaxial (HFC) cable network..” (paragraph [0027]).

CM (108a-n): “. . . and a plurality of cable modems (CM) 108a-108n” (paragraph [0027]).

Downstream SDRAM (230): “In an embodiment, a downstream synchronous dynamic random access memory (SDRAM) 230 is used” (paragraph [0037]).

First (Second) Upstream SDRAM (260a-b): “. . . first and second upstream SDRAMs 260” (paragraph [0039]); SDRAM is defined in prior paragraph [0037].

NCO (430): “. . . and a numerically controlled oscillator (NCO) 430.” (paragraph [0059]).

Thus, the reader should have no difficulty in understanding the functions of the various blocks of the drawings.

However, in the interest of expediting prosecution, Applicants have amended the drawings to overcome the Examiner’s objections, with the exception of “SDRAM.” Support for the amendments may be found, *inter alia*, at the aforementioned paragraphs defining the acronyms. Applicants have not defined the term SDRAM in the figures (in addition to the aforementioned definition in the specification) since this term is well known in the art.

Applicants respectfully request Examiner withdraw the objections to these drawings.

Objections to the Information Disclosure Sheet

On page 2, the Examiner asserted that Information Disclosure Statement (IDS) filed on January 9, 2006 failed to comply with 37 C.F.R. 1.98(a)(2), and did not consider foreign patent document EP 1024618 A2 because applicants did not provide a English copy of the document.

Applicants respectfully re-assert that the January 6, 2006 IDS complies with 37 C.F.R. 1.98 as it contained, in addition to EP 1024618 A2, a European Search Report which provided a concise explanation of the relevance of EP 1024618 A2 pursuant to 37 C.F.R. 1.98(a)(3)(i). Applicants have therefore satisfied their duty of disclosure under 37 C.F.R. 1.56 and assert that this reference must be considered by the Examiner. As a courtesy, Applicants have included a copy of an English language abstract of EP 1024618 A2.

Rejections under 35 U.S.C. § 112

Independent claim 16 and dependent claims 17-25 and 36-38 have been rejected under 35 U.S.C. § 112, second paragraph, allegedly being indefinite to particularly point out and distinctly claim the subject matter of the invention. To expedite prosecution, claim 16 has been amended without acquiescing to the propriety of this rejection. As amended, claim 16 recites:

. . .

a receiver configured to *receive a plurality of signals* from a central entity;
a clock generation element configured to generate a symbol clock based on timing information included in *a first signal received by the receiver* and to maintain the symbol clock upon a loss of reception of the first signal; and
an offset determination element configured to determine a symbol clock offset between the *first signal and a second signal received by the receiver* using the maintained symbol clock
...

The first and second signals received by the receiver are any of the plurality of signals that the receiver is capable of receiving. Thus, the antecedent bases of the first and second signals are properly established in claim 16. Claims 17-25 and 36-38 depend from claim 16. Thus, for at least the reasons above, the antecedent bases of the first and second signals are properly established in claims 17-25 and 36-38. Therefore, reconsideration and withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. § 102

On page 6, claims 1-3, 16-18, 25, 33-47, 55-56, and 63-68 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Application Publication No. 2001/0055319 to Quigley et al. ("Quigley"). Applicants respectfully traverse.

In rejecting independent claim 1, the Examiner contended that Quigley disclosed all elements of claim 1, citing FIG. 2, element 12 and paragraphs 9 and 132. Applicants respectfully disagree with the Examiner's position.

Independent claim 1 recites:

...
upon a loss of reception of the first signal, maintaining the symbol clock;
...

determining a *symbol clock offset* between the first signal and the second signal *using the maintained symbol clock*; and *adjusting the maintained symbol clock* based on the symbol clock offset to generate an adjusted symbol clock..

In contrast, Quigley discloses a second message receiving a *slot timing* offset (Quigley, paragraph [0009]); a fractional symbol time loop which determines a fractional symbol timing offset (Quigley, paragraphs [0132], [0200] - [0208]), with the fractional symbol timing offset defined as “a precise modification to slot timing” and which is determined when “acquiring a data packet” using a phase locked loop (Quigley, paragraphs [0200], [0203], [0204]; and use of a fractional symbol timing feedback loop to determine the fractional symbol timing using the binary pattern of the preamble. (Quigley, paragraphs [0210], [0212]). In short, Quigley discloses “enhanced data packet acquisition” which includes “fast clock phase recovery” using at least one phase locked loop. (Quigley, paragraphs [0132] [0205]-[0210]).

Nowhere does Quigley teach *maintaining* a symbol clock upon loss of reception of a first signal, determining a symbol clock offset between a first signal and a second signal using the maintained symbol clock, or adjusting the maintained symbol clock based on the symbol clock offset.

For at least these reasons, independent claim 1 is patentable over Quigley. Reconsideration and allowance of claim 1 is respectfully requested. Claims 2, 3, and 33-35 depend from claim 1. For at least the above reasons, and further in view of their own features, dependent claims 2, 3, and 33-35 are patentable over the cited reference. Reconsideration and withdrawal of the rejections are therefore respectfully requested.

Independent claims 16, 39 and 55 are patentable for reasons similar to those presented above in regard to claim 1. Further claims 17, 18, 25, and 36-38 depend from

claim 16; claims 56 and 63-68 depend from claim 55; and claims 40-47 depend from claim 39. For at least the above reasons, and further in view of their own features, dependent claims 17, 18, 25, 36-38, 40-47, 56, and 63-68 are patentable over the cited reference. Reconsideration and withdrawal of the rejections are therefore respectfully requested.

Rejections under 35 U.S.C. § 103

On page 9, the Examiner rejected claims 4-6, 9, 10, 19-21, 24, 26, 32, 48-50, 53, 57-59, 62, and 69-70 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2001/0055319 to Quigley et al. ("Quigley") in view of U.S. Patent No. 6,356,555 ("Rakib Patent"). Applicants respectfully traverse.

Independent claim 10 recites:

...
storing information associated with the timing information to
provide delayed timing information; and
upon a loss of reception of the signal, accessing the delayed timing
information to maintain the symbol clock.

As discussed above, Quigley discloses a fractional symbol time loop which determines a fractional symbol timing using the binary pattern of the preamble of the received signal (Quigley, paragraphs [0132], [0200] - [0212]). Nowhere does Quigley disclose maintaining a symbol clock upon loss of reception of a signal. As the Examiner admits, nowhere does Quigley disclose storing information associated with timing information to provide delayed timing information. Moreover, nowhere does Quigley disclose accessing this delayed timing information.

Moreover, the Rakib Patent adds nothing to Quigley. The Rakib Patent discloses filling up pages of memory with the *data*, not timing information, as “the *data* from new timeslots is received” (Rakib Patent, col. 46, lines 55-65) and a “trial and error” alignment process of “adjusting a delay from the time of receipt of the barker code to the time of transmission of the same barker code . . . until the delay is properly adjusted.” (Rakib Patent, col. 21, lines 44-55). Nowhere does the Rakib Patent disclose storing information associated with timing information to provide delayed timing information which is accessed to maintain a symbol clock.

For at least these reasons, independent claim 10 is patentable over Quigley in view of the Rakib Patent. Furthermore, independent claim 26 is patentable for at least the reasons presented above in regard to claim 1. Reconsideration and allowance of claims 10 and 26 is respectfully requested. Dependent claim 32 depends from claim 16, and is believed allowable for at least the same reasons and further in view of its own features.

Independent claims 1, 16, 39, and 55 are patentable over Quigley for at least the reasons listed under the § 102 section above. Moreover, the Rakib Patent does not remedy the above-discussed deficiencies in Quigley, or add anything to Quigley that would have made obvious the claimed invention. Dependent claims 4-6 and 9; 19-21 and 24; 48-50 and 53; and 57-59, 62, 69, and 70 depend from independent claims 1, 16, 39, and 55 respectively, and are believed allowable for the same reasons and further in view of their own features.

Reconsideration and withdrawal of the rejections are therefore respectfully requested.

On page 9, the Examiner rejected claims 11-15 and 27-31 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2001/0055319 to Quigley et al. ("Quigley") in view of U.S. Patent No. 6,356,555 ("Rakib Patent") and further in view of U.S. Patent No. 6,243,369 to Grimwold et al. ("Grimwold"). Applicants respectfully traverse.

Independent claims 10 and 26 are patentable over Quigley and the Rakib Patent for at least the reasons listed above. Moreover, Grimwold does not remedy the above-discussed deficiencies in Quigley and the Rakib Patent, or add anything to Quigley and/or the Rakib Patent that would have made obvious the claimed invention. Dependent claims 11-15 and 27-31 depend from independent claims 10 and 26 respectively, and are believed allowable for the same reasons and further in view of their own features.

Reconsideration and withdrawal of the rejections are therefore respectfully requested.

Other Matters

With respect to the present application, Applicant hereby rescinds any disclaimer of claim scope made in the parent application or any predecessor or related application. The Examiner is advised that any previous disclaimer of claim scope, if any, and the alleged prior art that it was made to allegedly avoid, may need to be revisited. Nor should a disclaimer of claim scope, if any, in the present application be read back into any predecessor or related application.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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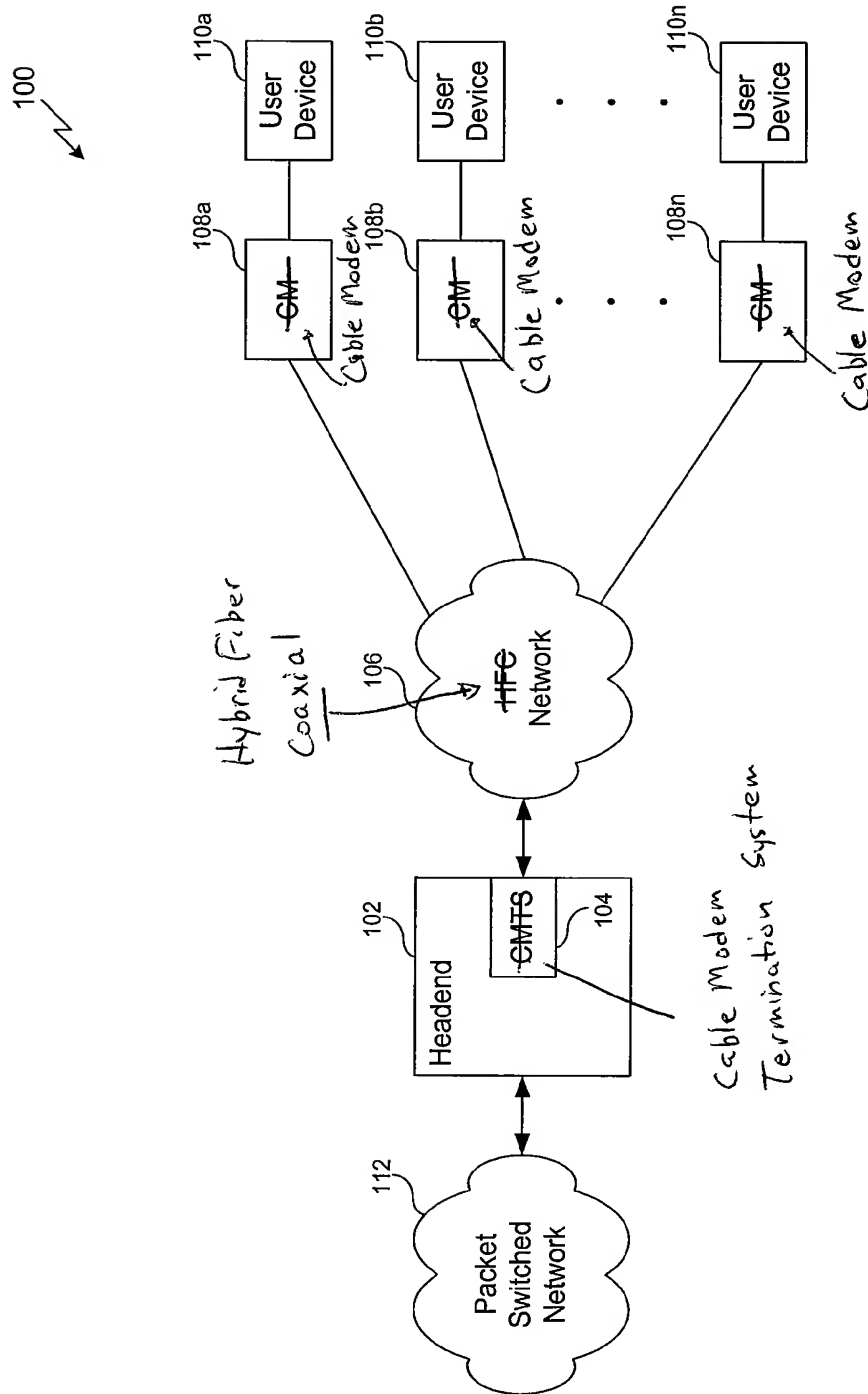


FIG. 1

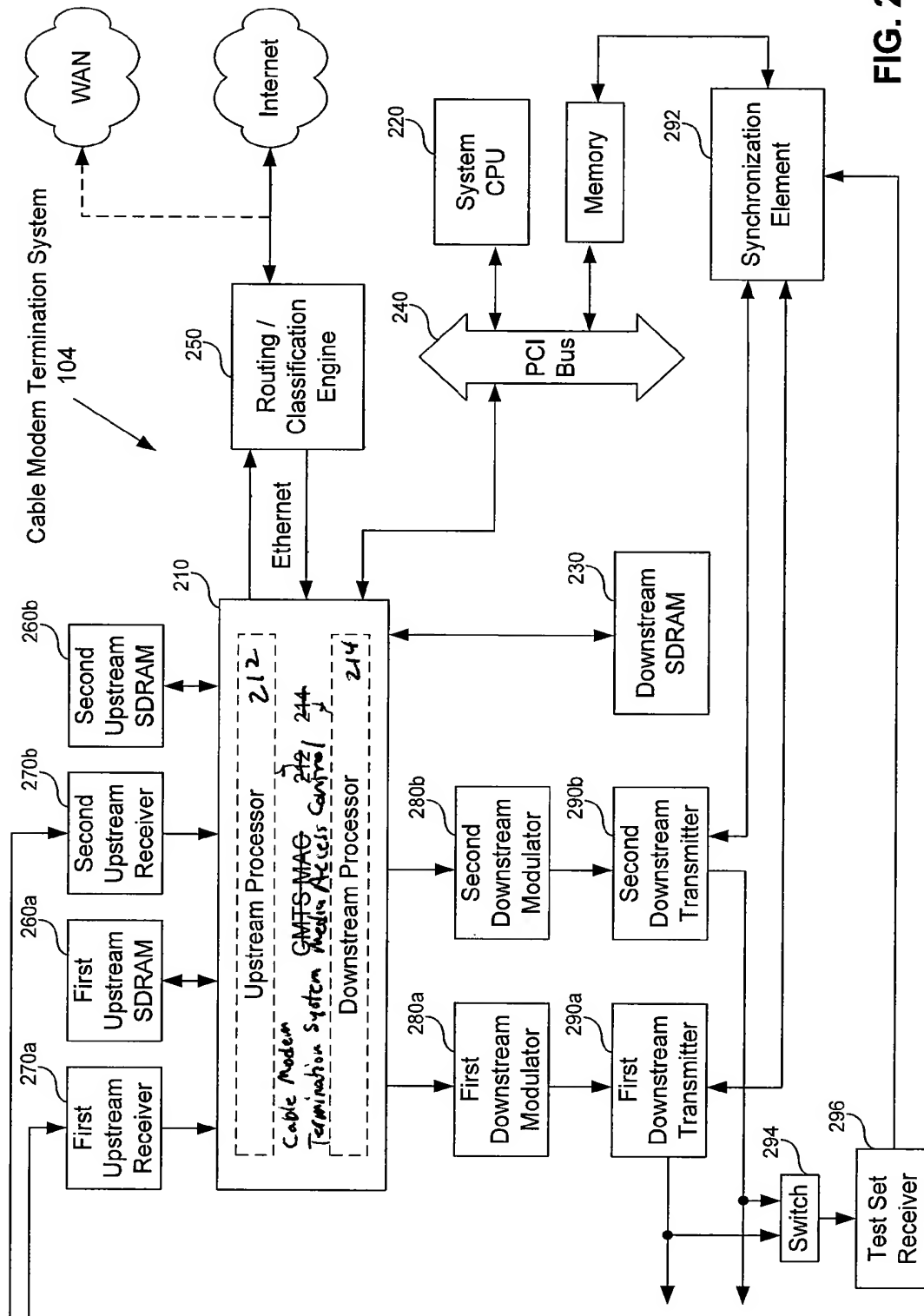


FIG. 2

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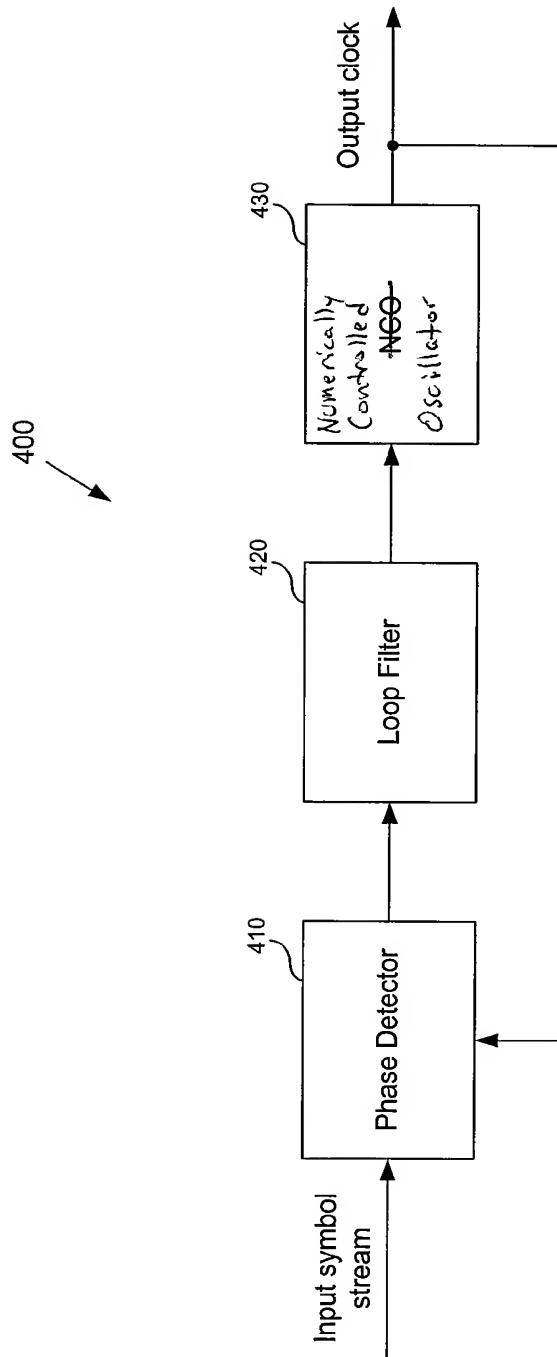


FIG. 4A

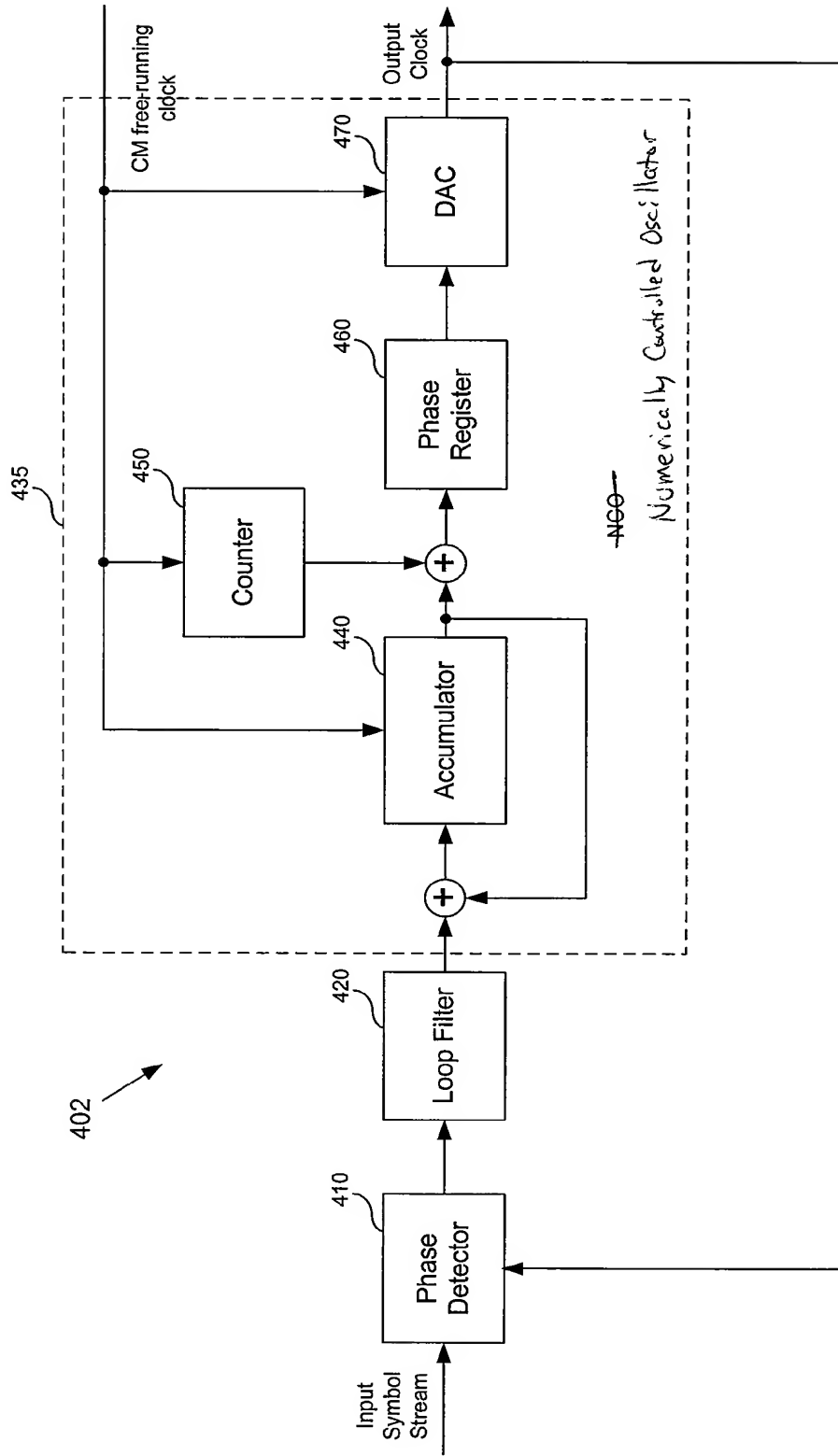


FIG. 4B

